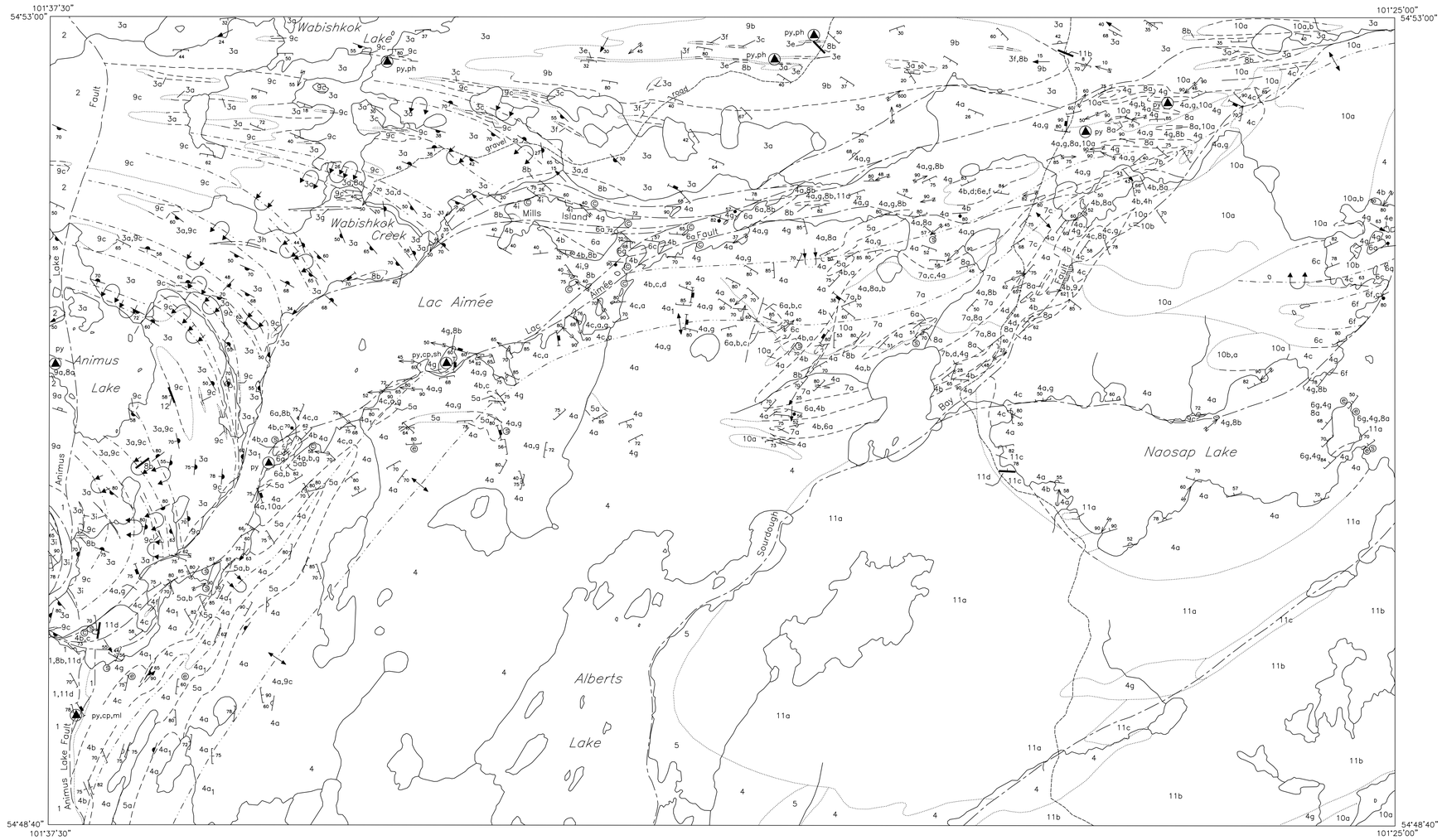
Manitoba
Energy and Mines

Open File Map OF99–1
Lac Aimée–Naosap Lake
(to accompany Open File Report OF99–1)

Cartography by: E. Truman

N.T.S. Parts of 63K/13SE and 63K/14SW



GEOLOGY OF THE LAC AIMÉE–NAOSAP LAKE AREA

Legend

PRECAMBRIAN

POST 1.9 Ga INTRUSIVE ROCKS

12 Diabase, aphyric to plagioclase phyric

11 (a) granodiorite, tonalite (hornblende + biotite–bearing)
(b) granodiorite, granite, aplite
(c) felsite, plagioclase ± quartz porphyry
(d) quartz ± plagioclase porphyry (2 mm – 1cm)

10 (a) gabbro, amphibolite
(b) hornblendite (pyroxenite–derived)

AMISK COLLAGE

INTRUSIVE ROCKS (inferred synvolcanic or penecontemporaneous with 1.9 Ga volcanism)

9 Mafic intrusive rocks
(a) gabbro, gabbronorite, hornblendite (Batters Lake sill)
(b) gabbro, minor hornblendite (North Aimée gabbro)
(c) gabbro (sills intercalated with mafic volcanic rocks)

8 Felsite, felsic porphyry
(a) felsite
(b) plagioclase ± quartz porphyry (1 – 5 mm)

7 Tonalite, quartz diorite; granodiorite, granite
(a) tonalite, leucotonalite, quartz diorite; minor diorite
(b) leucodiorite, quartz diorite; minor diorite
(c) granodiorite, granite
(d) aplite

Lac Aimée and Sourdough Bay arc and arc–rift volcanic rocks; related turbidite–type sedimentary rocks

6 Volcanic–derived sedimentary rocks and reworked mafic tuff
(a) feldspathic greywacke, siltstone
(b) chert, cherty siltstone
(c) intermediate to siliceous siltstone
(d) argillite, argillaceous siltstone
(e) quartz–bearing greywacke, siltstone
(f) mafic greywacke
(g) cordierite schist, gneiss (± garnet)

5 Felsic volcanic and related intrusive rocks
(a) rhyolite, plagioclase ± quartz phyric; minor felsic tuff, breccia and related intrusive rocks
(b) felsic tuff, lapilli tuff

4 Mafic to intermediate volcanic and related intrusive rocks; derived schist and gneiss
(a) basalt, basaltic andesite, aphyric to plagioclase phyric; minor related volcanic breccia, diabase and gabbro
(a1) basalt, pyroxene phyric
(b) mafic tuff, crystal tuff; minor lithic tuff and lapilli tuff
(c) intermediate to mafic heterolithic breccia, minor tuff
(d) intermediate tuff, crystal tuff
(e) pyroclastic breccia, felsic fragments
(f) pyroclastic breccia, mafic fragments
(h) diabase; aphyric to porphyritic
(g) mafic schist, gneiss and amphibolite (amphibole–chlorite ± epidote)
(i) chlorite–carbonate schist

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ Fault contact ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Animus mafic volcanic, related intrusive and minor sedimentary rocks

3 (a) basalt, aphyric, pillowed to massive; minor related breccia and sparsely plagioclase phyric basalt. (a1) basalt, plagioclase phyric
(b) diabase, plagioclase phyric
(c) mafic tuff
(d) chlorite schist
(e) iron formation: sulphide–bearing chlorite–sericite schist, siltstone, argillite and chert
(f) intermediate to siliceous siltstone, feldspathic greywacke
(g) intermediate to mafic crystal tuff, minor lapilli tuff
(h) intermediate to mafic volcanic breccia, plagioclase phyric, quartz amygdaloidal (highly sheared)
(i) Swordfish Lake metasedimentary unit
quartz–bearing feldspathic greywacke, siliceous to argillitic siltstone, argillite; minor intraformational pebble conglomerate

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~Fault contact~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Tartan arc–type mafic volcanic rocks

2 Basalt; aphyric to plagioclase phyric, pillowed to massive, commonly amygdaloidal

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~Fault contact~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Mikanagan BABB ocean–floor basalt

1 Basalt, aphyric; minor variolitic and plagioclase ± pyroxene phyric basalt; related diabase and gabbro

Notes.

1. Unit 3i (Swordfish Lake metasedimentary unit; Gilbert, 1990) may postdate 1.9 Ga volcanic rocks.
2. Unit 6 may include sedimentary rocks that postdate 1.9 Ga volcanic rocks.
3. Units 7, 8 and 9 may include intrusive phases that postdate 1.9 Ga volcanic rocks.
4. The relative ages of units 10 and 11 are not determined.
5. The geology of the area south and southwest of Naosap Lake is partly after Bateman and Harrison (1943) and Kalliokoski (1949).

References.

Bateman, J.D. and Harrison, J.M.
1943: Mikanagan Lake; Geological Survey of Canada Map 832A; scale 1 inch = 1mile, with marginal notes.

Gilbert, H.P.
1990: Geological investigations in the Tartan Lake–Mikanagan Lake area; in Manitoba Energy and Mines, Minerals Division, Report of Activities, 1990, p. 20–36.

Kalliokoski, J.
1949: Weldon Bay; Geological Survey of Canada Map 1020A; scale 1 inch = 1 mile, with marginal notes.

Symbols

- Geological contact; approximate, gradational, assumed
- Bedding; top unknown, known
- Pillows; top unknown, known
- Igneous layering (tops unknown)
- Flow contact; top unknown
- Foliation; first generation, third generation
- L–fabric
- Fold axis
- Z, S, U folds
- Axial plane

- Axial trace of first generation anticline (overturned)
- Axial trace of first generation syncline (overturned)
- Axial trace of second generation anticline (upright)
- Axial trace of second generation syncline (overturned)
- Fault, inferred
- Shear zone
- Fault breccia
- Dyke

- Mineralization
  - py pyrite
  - cp chalcopyrite
  - ph pyrrhotite
  - sh sphalerite
  - ml malachite
- Alteration
  - (S) silicification
  - (E) epidotization
  - (C) carbonatization
- Provincial road, gravel
- Trail

Geology by: H.P. Gilbert

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This map is a provisional summary of work carried out during the summer field season and is printed directly from the geologist's manuscript. It is not to be regarded as a final interpretation of the geology of the area.

Scale 1:20 000

KILOMETRES 0 1 2 KILOMETRES

Reference: Geology of the Lac Aimée–Naosap Lake area (63K/13SE and 63K/14SW); Manitoba Energy and Mines, Preliminary Map 1997F–1, 1:20 000.
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